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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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09/844,277

04/30/2001

Gordon W. Roberts

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09/17/2004

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EXAMINER

WAMSLEY, PATRICK G

ART UNIT

PAPER NUMBER

2819

DATE MAILED: 09/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/844,277

Applicant(s)

ROBERTS ET AL.

Examiner

Patrick G. Wamsley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 11-13, 15-17, 22, 23, 25 and 27-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 14, 18-21 and 24-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Election of Species

Applicant's election of the species depicted in Figure 1, readable upon claims 1-10, 14, 18-21, 24, and 26 in the reply filed on 08/12/2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 11-13, 15-17, 22-23, 25, and 27-29 are hereby withdrawn from consideration as readable upon non-elected species.

Drawings

A new drawing sheet, depicting Figure 14, was received on 08/12/2004. This drawing has been approved.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-10, 14, 18-21, 24, and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,703,957 to Morimoto et al, hereafter Morimoto.

For claim 1, Morimoto discloses a DC voltage generator comprising a digital pulse modulation generator [a digital to analog converter, hereafter DAC: column 3, lines 60-61] and an analog averaging circuit [low pass filter, hereafter LPF: column 3, line 66]. Claim 19 restates these apparatus limitations in method format.

For claim 2, Morimoto provides a memory based periodic bit-stream generator. For example, Morimoto's third embodiment uses two memories [37 / 38].

For claims 3, 7, and 19-20, Morimoto discloses programming means [controller 11] and serially outputs a bit stream.

For claims 4-5, 8-9, and 24, Morimoto discloses pulse density modulation, hereafter PDM, and pulse width modulation, hereafter PWM [see the abstract].

For claims 6 and 21, Morimoto's combination of a multiplexer [36] with cycling memories [37 / 38] functions as the claimed circular shift register.

For claim 10, Morimoto disclose a $\Delta\Sigma$ modulator, functionally equivalent to the recited $\Sigma\Delta$ modulator.

For claim 14, Morimoto's LPF [12] comprises a capacitor and a resistor. For claim 26, Morimoto filters a periodic [sine wave] bit stream.

For claim 18, Morimoto's elements are inherently co-integrated on a chip.

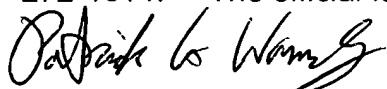
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,459,398 to Gureshnik et al discloses a pulse modulated DAC having a low pass filter. U.S. Patent 6,317,067 to Mohindra presents a pulse density modulation based DAC.

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U.S. Patent 6,081,150 to Yamaura et al uses PDM and PWM signals with a LPF [30] to generate an average voltage.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick G. Wamsley whose telephone number is (571) 272-1814. The official facsimile number is (703) 872-9306.


Patrick G. Wamsley
September 15, 2004